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Manley, R.M.

The energy problem

[Cleveland]

[1918]

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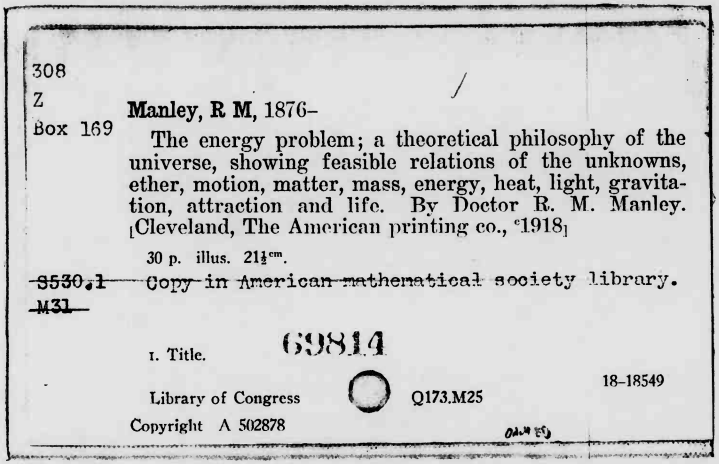

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THE ENERGY PROBLEM

BY
DOCTOR R. M. MANLEY

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by R. M. Manley
Cleveland, Ohio

THE ENERGY PROBLEM

A theoretical philosophy of the universe, showing feasible relations of the unknowns, ether, motion, matter, mass, energy, heat, light, gravitation, attraction and life.

BY
DOCTOR R. M. MANLEY

INTRODUCTION

As scientific research progresses, there develops the feeling that scientists are not "Arriving." This arises from the facts that sometimes laws, after general acceptance, are found upon last analysis, to be founded on false premises; also that interrelations of different schools of thought cannot be co-ordinated, because of lack of any common ground upon which to base arguments. Discrepancies arising in the laws of gravitation, which is the very foundation from which science reasons; are quite confusing to say the least. The perihelion of Mercury does not move in accord with Newton's inertia-attraction theory regarding gravitation; neither do the equators of the sun and Jupiter; which move with greater angular velocities than the higher latitudes of the same. Plank's quantum theory does not harmonize with the electro-magnetic theory but seems to be more in accordance with facts. Are we on the right road or is our foundation of questionable character? We are unable to properly relate ether, motion, matter, mass and energy; or to account for space relations; or motion relations, such as rotations, revolutions and translations of heavenly bodies. We cannot satisfactorily explain the interior heat of planets and stars, its limitless character: or explain the cause of the transverse wave of light, propogated longitudinally; its increased frequency when source approaches and vice versa. These are questions of immense importance as well as of great uncertainty at the present moment.

The following pages are brought together with a hope of throwing some light upon the foregoing and other equally obscure problems and possibly to assist in establishing a philosophic basis of understanding where thinking men of all the different branches of science and schools of philosophy may unite upon foundation principles. Evidence is accumulating that the matter-ether theory of the cosmos; the electro-magnetic theory of light; the substance-energy theory of physics; the inertia-attraction theory of gravitation and the heaven-hell theory of eternity will fail to fulfill the demands of thinking men of the future. These theories must prove true or be patched up to conform with the facts or new ones propounded. They cannot hold sway without satisfying the need. In these pages, an attitude of mind relating the whole cosmos to the various unknowns; and those unknowns, each to the other, has been formulated. A solution to the puzzling problems of scientists and philosophers has been humbly attempted in this and another booklet; actuated only by desire or perhaps determination for unfoldment of truth. Immediate acceptance is not expected, in as much as the proposal is of too radical a nature for scientists to accept until complete proof follows. However earnest thought concerning the subject will disclose the fact that while theoretically the hypotheses outlined are radically different than those extant; practically the change being so opposite; the general laws are not much disturbed.

Mar 27, 1925 AL

THE MASTER PROBLEM

The master problem of philosophers for this century is to determine the relations that prevail between God and life and ether, motion, matter, mass, energy, time, space, position, direction and polarity; and having thus related all entities, to know the nature of heat, light, electricity, gravitation and even life itself. Statements following are not set up as truths but as theories conditional upon the premises. Some phase of the problem has been under the consideration of the best minds of every age but solution has not yet been accomplished. The problem is unquestionably a cosmic one but until searchers for truth in various lines will unite their efforts in research; the work must be performed individually, consequently subject to the limitations of the individual worker. The contention of this theory is that all of man's universe is from one and only just one ultimate absolute or from a single entity. Together with this single entity theory, is considered an hypothetical ether, having as its predominating characteristic, etherites, or particles of matter of uniform size, mass, velocity, energy and distance of separation. Keys to solution are: the relations of planets' rotations; revolutions of the satellites of Uranus nearly at right angles to the plane of ecliptic; discrepancies between gravitational theories and facts; motions of heavenly bodies; the role played by the hollow spheres or cells.

PASSING PHILOSOPHY

All philosophies, as complete systems, are only passing; but each one supplies its quota of permanent facts for the building of the ever changing cosmic philosophy. Reed's common sense philosophy, Kant's transcendental, Spencer's evolutionary; Fichte's idealistic and Compte's positive; all passed into the shadow of the broader thought but each one supplied chosen truths for the benefit of all posterity. Many generations of passing philosophies have been necessary to accumulate a few solid or truthful conclusions that are real laws. Through many falterings, man's mind wanders from hypothesis, through theory, to truth. In the history of cosmic philosophy, page after page has been torn out after acceptance by the best thinkers for many generations. In the great cosmic philosophy, individual opinion is of value only as it unfolds the truth and the weight of the opinion of genius may sometimes even suppress the truth. The fact that the whole educational world accepts a theory, does not in itself place that theory in the category of truth; neither does this nor the opposite, place it in the realm of untruth; rather must it be viewed with a critical eye and logical mind, without reasoning from hypothetical premises, through theory, to fact except by the process of total elimination: each observer standing on his own ground, based on common laws of logic.

TRUTH

Many facts cover or uncover a single truth. Hypotheses develop hypotheses, theories produce theories and not the one truth. If we cannot change our attitude of mind toward worthy new processes of thought; let us at least not hinder the progress of truth by calling hypotheses and theories by the name, law, but call each by its own cognomen. Perhaps true thoughts, like true people, may not make as favorable first impressions as do those well dressed but after many, many, many repetitions, they win their deserved respect. Weight of authority upon the side of a false premise is burden for even truth to overcome. Likewise beauty, as authority, may bear witness upon the side of either truth or falsity. The beauty and grandeur of the nebular hypothesis were important factors in withholding from the world, the manner of origin of the solar system, as were also the opinions of the originating, authoritative minds. To judge every accepted fundamental or law, not by those in authority who accept or reject it; but by the truthfulness or falsity of the premises from which it originates and by the logical or illogical process of reasoning by which it has been established; is not only right thinking but justice to one's self. Acceptance or rejection of a theory may alter its value but not its truth or falsity. Truth is only determined by right thinking.

COSMIC ENTITIES

Physically, the world has passed into but not out of that attitude of mind that demands a dual entity—substance and energy. Chemically, the world's process of thought has passed the stage demanding diversity of fundamental elements, toward that which sees all derived from one fundamental element, or at most from one and "Something."

Religiously, the world has left behind the idea of many gods and taken up with that of a Triune God, or One God, or One "Plus." Philosophically the world is far behind and is still demanding manifold entities, likewise whenever the philosophic process of thought meets confusion or leads to a blind alley, such emergency is met with another entity. In philosophy, the entities of physicists, matter and energy, are accepted as absolutes; also to a greater or less extent their allied chemical counterparts. To these, philosophers add gravitation or its entity attraction, thus arriving at an hybrid between substance and energy. Here again confusion as to the space between, so another entity, ether; and even space itself becomes another; and time another; and life or soul another; and God. But if philosophers are beset with absolutes, there remains the consolation that along the lines concerning which knowledge is most accurate, there remain the fewest entities. Education tends to eliminate false absolutes.

COSMIC UNITY

Quest of finalities never leads to other than new ultimates but thus increased knowledge is gained and fresh fields opened for endeavor. The pessimism on account of "Not arriving" is in itself an indication that the world is all the time arriving by proving the falsity of theories that never could arrive and thus constantly driving new roads into wilderness, every part of which must be accurately mapped. Should these findings necessitate retracement of our steps over roads already to a certain degree familiar or acceptable; the answer is that it were better to retrace a short distance than to wander far in darkness of ignorance. Whole theories may have to be discarded to supply a bit of real truth to fit cosmic law. Periods of doubt are followed by periods of receptivity to new and promising theories. This is a cosmic age, peoples, thoughts and endeavors and the world has only just begun to tap its cosmic possibilities; but another step is at hand and the fore runners of this attitude of mind are already marking time. This step is that of unity, unity of peoples, unity of endeavors, unity of religions; cosmic unity; and it can only be accomplished by establishing or unifying the true relations of the great principles of life; matter, energy, gravitation, heat, light and electricity. Thinking men realize that in the direction of cosmic unity are such future developments.

THE SINGLE ENTITY

Complete philosophic unity is only possible or is conditional upon reducing all entities to just one absolute or to a single entity. With the establishment of such an absolute, all schools or sects or processes of thought blend into one harmonious whole; without such unity, friction and antagonism continue. However, it is truth we seek rather than the harmony but truth should bring out harmony. In order to construct a philosophy of unity; all that the mind of man conceives must be of or from just one absolute entity or unit. All things or conceptions must be related through this common entity; matter, energy and all their forms and forces; life, thought and will and their resultants; must all be manifestations of the one common absolute. Such process of thought necessitates the giving up of the creation of new entities whenever questions are unanswerable or the truth for which we search is unobtainable. In philosophic unity, such substitution is not permissible. Matter, energy, mind, will, ether, motion, attraction, life, may not be separated as unknowable; but rather related or correlated into one grand complexity that will at the same time constitute simple cosmic unity. Details of how such diverse phenomena arise from a single absolute unit, may or may not be beyond the reach of man's mind when the dual, triple and multiple entities are eliminated.

THE ABSOLUTE

Recognizing the possibility of the oneness of all, or the unity of all the cosmos; let us suppose the whole known universe, from stellar system to electron, and as much farther in either direction as the relation of man may be concerned; made up of, or from, just one fundamental absolute or entity. Assume that between the stars, molecules and electrons, there exists in ether space this self same absolute, differing from that in gross matter in its manner or form of motion. Disintegrating a star, forming molecules, breaks up the complexity of its motions; also when molecules are reduced to electrons. Assume that ether is simply matter possessing fewer types or complexities of vibrations. Assume that motion and matter are two, only in the sense that matter has another type of vibration added to the existing complexities but indivisible as two separate entities. Let us assume that life and mind and will are of or from the self same single absolute. Such is a unified cosmos in the sense that the whole is from one absolute or entity. It is a diversified cosmos in the sense that every part of one kind or form is in outward contact with parts having different motions, systems or complexities of vibrations. The absolute embraces all known and unknown phenomena; the all one and the one in all; the one entity from which all springs.

CONSTANT INCONSTANCY

One fact stands out above all others in the known universe and this is that change is ever taking place. Every particle, except possibly one, in the whole universe is constantly undergoing change of position; change of position means change of energy, potential to kinetic and the opposite; so we may add that change of energy is constant so far as it relates to matter and motion. Thus there is one great foundation principle upon which to base all philosophic reasoning. So far as the mind of man reaches toward the great unknown, change is the one constant. Tracing down from man's mind, the greatest known complexity, toward the more fundamental of nature's phenomena; we pass through the nervous and muscular structures to the simple cell, or life, and from the cell, through the crystals, elements, atoms, electrons and to matter as one of the very fundamentals of nature; more fundamental apparently than life, than attraction, than heat or light; but still not more fundamental than motion. Leaving matter behind and passing into ether, we are still within the realm of motion. Energy is transferred from place to place through ether and thus motion is the last elemental, fundamental, which we recognize. Vibration or motion is the fundamental of all the fundamentals and change is the ever present constant in the universe.

INFINITE TO FINITE

Admitting the possibility of having just one ultimate entity in the universe of which we are cognizant, and giving that entity all the attributes necessary to produce all the possible phenomena; such an entity in its ultimate completeness must be infinite. Any part of the infinite becomes finite, but all finite is essential to make the infinite. The mind of man can reach only a limited way toward the infinite and the last recognition is constant change; next to this is motion or vibration and nearer still is matter. Vibration may be said to be the last distinct phenomenon on the way toward the infinite. Let us assume that on the road from the absolute into the finite, there is a stage in which all motion is symmetrical and the predominating type of matter occurs in units uniform in mass, energy and distance asunder. It is obvious that matter or vibration may in some state be of such small proportion; not in any way directly to concern the life of man; likewise that it may also exist so composite or gross, not to influence man's life or mind; but let us assume that between these limits, there is a stage or type of matter having parts of equal masses and also equal totals of motions, velocities or energy. Let us presume these particles equidistant from each other and generally uniform except every particle moving in a different direction.

ETHERITES

Let us name these small similar bundles or particles or masses of motion—ETHERITES. Assume that each etherite is similar to every other etherite except in its quality or type or direction of motion; that the total of all motions is the same for each etherite; and that the mass and size are similar for all etherites; also that the distance separating the etherites from each other tends toward a common unit but varies according to motions. Assume that these etherites have no inherent, attracting entity within themselves that will attract other etherites, other than vibration. Assume that etherites move with a translatory velocity of 186,400 miles per second and in straight lines until interference is met. Etherites have mass and motion, thus energy; inherent in the sense of being derived from the absolute within, rather than from some force applied from without, like gravitation. Imagine this predominating type of body in ether, rotating according to laws or relations that concern the whole cosmos; rotations as well as translatory movements being in no one particular plane or direction; but all being translated, revolved and rotated in every conceivable direction, tending to fill all space and also to maintain a definite unit distance asunder, giving a type of matter in which every part is just like every other part except in the direction of its motion.

ETHER

It may be observed that this process of thought calls for the manifestation of definite types of phenomena as the result of the particular type of matter in which they may occur. For instance in a medium, having predominating bodies of uniform size, mass, energy and distance asunder; phenomena of the wave transmission would be quite different from phenomena manifested were these all unlike. Likewise were directions of motions uniform or diverse, the manifested phenomena would vary accordingly or be limited accordingly. Ether will be considered as a distinct type of matter; or at least its predominating body or its characteristic unit, the etherite. Ether is just matter, not alone etherites but embraces all smaller types of matter from etherite down, with etherites as the largest, predominating type from the human standpoint. Let us assume that all ether space is filled with finer and finer matter and that etherites fill the ether space only in the sense of the tension or space relation of one etherite to others and that all matter is just ether or etherites with different types of motion; and ether is matter, stripped of some of its many complexities of motion or vibration. Etherites, having no attraction for each other, do not tend to unite but to fill all space with etherites moving with the velocity of light, in every conceivable direction.

RELATIONS

If the attitude of mind that conceives or maintains this theory is the right process of thought, then the one and only absolute is related to all such former entities as ether, motion, matter, atom, energy, time, space, electron, gravitation, attraction and life; and through this absolute or some finite manifestation of it that is more closely related to man than the absolute itself, all of these entities are related to each other. This theory contends that if we pass down to the type of motion represented by etherites, we arrive at a common factor that will account for nearly if not all the phenomena and the relations that nature manifests to mankind. The etherite has an inner structure that we need not know, though it is not the ultimate. It has a surrounding medium that is finer than etherite bodies, that we only need consider as matter or motion of the same absolute but of vibrations or motions beyond the reach of the coarse tools that man's investigation employs. It has as neighbors to act upon but not to touch, other etherites as individuals, and larger masses or aggregates of matter or of etherites, not touching each other but of sufficient total size that man through his senses may comprehend them or their phenomena. Comprehension of the possibility of such plan is not difficult, nor is the fitting of such relations to the nature of known phenomena.

ENERGY

The etherite mass, size and distance asunder being uniform and the velocities equal and so great, all ether space is filled with equal numbers of etherites to equal volumes of space by inherent motion within the etherites, derived from the absolute; but in as much as they are moving in every possible direction with masses, velocities and distances asunder, equal for all etherites, there results no force or energy to do work except that force that maintains the same number of etherites to equal volumes of space and as a consequence, equal amounts of energy content to equal volumes of space or in other words, that maintains ether equilibrium. Let us assume that all energy, concerning which we have knowledge, is energy of etherite mass motion, including the tendency of etherites to fill all space with uniform numbers of these etherites, moving in every possible direction, consequently maintaining ether equilibrium. Under such hypothesis, energy is inherent in motion, in ether, in matter, in the sense of being the total of the complexity of the mass, matter, ether and motion; derived from the absolute, a dual entity not being permissible. Energy is the total of all the motions of the mass under consideration. Energy is the mass motion or stress of direction of mass motion. Energy is the last total of complexity of all such entities as mass, matter, ether, and motion, taken in their complete summation.

TIME

All passing philosophies are incomplete and such is to be expected, but the philosophy that does not account for time and space is so incomplete as to remain improbable. The most difficult words to define are those that represent ideas having no material form. Time defined as something flowing or a thing in itself is an error due to our inability to define in other than material terms, words representing relations or ideas not material. Project our thought into space and imagine a being so gross that to him the whole stellar system is like a drop of dew to mankind; and then project ourselves into the micro-cosmos and imagine a being so minute that electrons are as the stars to the mind of ordinary man. Now conceive if we can the lifetimes of the little being that go to make up the smallest possible conception of time of the gross one. We then see the mathematical justice of an ideal, absolute time; but also comprehend the philosophic injustice of comparing the time of the minute one with that of the gross one; except as a relation of motion; also we see the philosophic injustice of an absolute, flowing time, or time as a thing in itself, an entity. Philosophically, time is relation of motions and in as much as motion carries us to the very brink of the unknown, we unwittingly call time by a false cognomen, for the lack of more complete knowledge to better define it.

SPACE

The grandeur of time as a flowing absolute aids the judgment to err in its reasoning. The opinion of genius that space is something, or nothing, having continuous extension, abets the same error. Both lead to philosophic chaos. We need only ask: Can time exist without motion? Without motion, time is an utter impossibility. The same process of thought applies to space: Can space exist without position and direction? Space is relation of position and direction. Position and direction are relations of motion. Aggregates of times, positions and directions of motions tend to produce conceptions such as matter, mass, energy, electron and etherite; and these represent composite motion relations. Could we conceive of motion, carried to the absolute or infinite; all motions or vibrations would be alike, consequently their relations to each other, unity; thus there would be no varying relation of motions, therefore not any time and with the infinite there is no time. If we carry the conception of space to the infinite; all positions and directions are alike and the relation always unity; thus with the infinite or absolute there is no space. Time and space are concepts of the mind that knows disparity and diversity and formulates time and space to relate these differences but with the infinite these relations are unity.

ATTRACTION

If we imagine all matter dispossessed of the entity, attraction, it might at first seem as though the whole foundation structure of the laws of the forces of electrification and of gravitation must be rebuilt: this is not so. To conform with the attitude of mind of this theory, it is essential that we dispossess our minds of the idea of attraction existing as an entity in matter and replace it with a conception that the so-called attraction of matter for other matter is due to the types of motion that two masses of matter possess. It is not necessary to give up the laws that pertain to electro-magnetic and gravitational forces, as in a general way the same laws fit the newer theory, in as much as etherite mass motion energy is almost the exact opposite of the attracting entity of the older theory. Many discrepancies between theory and facts, prevailing under the older method of thought are accountable for under the newer method and while the old tends all the time toward new entities or unknowns like gravitation, attraction, ether, motion, matter, energy, electron, atom, life, soul, etc.; to conform the theory with observed facts: the new one eliminates all but one unknown and attempts to relate all phenomena and all present day entities through just one mutual absolute. One school calls the absolute, matter; another mind; another, will: let all use one absolute.

INTERFERENCES

When etherites, with the velocity of light, come head on toward each other in collision; the actual impaction or touching is prevented by the same type of force that prevents stars in the heavens from colliding or actually impacting; and this will be taken up in detail under gravitation, revolution and rotation. For the present let us call this would be impaction or collision an interference. When interferences take place in free ether, the path directions of the etherites change. Interferences may be caused, either by other etherites, or grosser matter, in the paths. Interference changes direction or velocity of translatory, revolutionary or rotary motion. In free ether space, the interferences that change rotary, revolutionary or translatory motion, tend in no particular direction and consequently tend to neutralize one another rather than to produce rotation or revolution in any one plane or in any single direction. However, were interferences continuous among the same set of etherites and in such manner as to result in definite, symmetrical and continuous curved motion; also in definite, continuous rotatory motion, the result might be a giving up of the straight line motion of etherites and a taking on, or increase, of other forms, such as revolution and rotation; giving another type or manifestation of the absolute which has been called matter.

MATTER

Matter, or this new type of manifestation of absolute, would have the same energy as the etherites which formed it but would possess different types of motion: added revolutions, or rotations, or oscillations, or vibrations. The quality or type of energy would change without changing the amount of the energy. The contention is not that etherites build atoms and molecules; nor that disintegrating stars and electrons form etherites; nor that these forms of transition are continuous, each from the other; but that certain relations exist between different forms of matter that are dependent upon the quality of the energy present in those particular manifestations of the absolute; and by the quality of energy is meant the type or direction or kind of motion. Matter, made up of a complexity of motions; when stripped of some of its complexities, is still matter or ether or etherites; but the total energy of all motions remains the same. Imagine the earth reduced to electrons; these electrons stripped of all rotary, translatory and revolutionary motions, so that all would touch each other; they might make a handful; but given these outward motions, which really are inherent from within; they make a worldful. Matter then is only the complexity of motions and varies as the quality of motions varies.

STRESS

Let us for the moment forget that matter contains an entity causing attraction and assume that the etherite mass motion is the source of all energy so far as concerns man. In order to simplify this explanation, let us for the moment assume that etherites do actually collide or impact with each other in free ether space; also with other matter. Suppose one body in free ether space to be bombarded by etherites from every direction. Suppose the body's interspaces impenetrable. This body represents interference but there is no translation through space by push or pull as etherites bombard all sides alike. The only tendency is for the body to occupy less space or become denser; but there has been a change of direction of motion of all the etherites that would have passed through such space as this body occupied in ether. Thus we have change of direction of mass motion or production of a space of stress. Next to that produced by the interference of two etherites in free ether; the above represents the simplest form of stress. Increase the number of bodies in ether space to two and conditions will be as in the former problem; but instead of one space of stress, we now have two and a cylindrical field of stress between the two bodies. This represents the next order of stress caused by two bodies in free ether space.

GRAVITATION

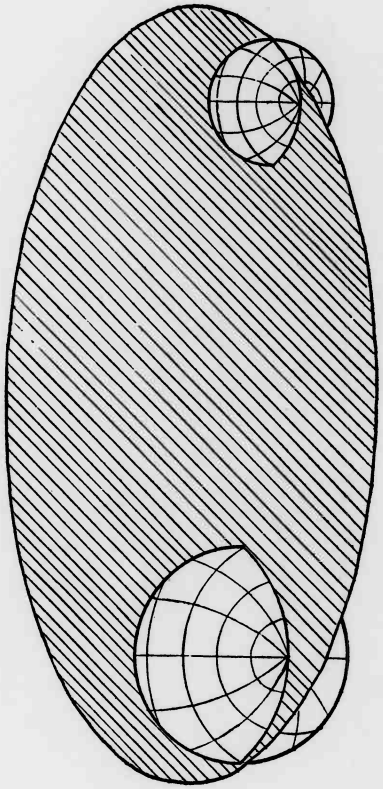
In the foregoing problem, the two bodies would be bombarded by etherites from every direction except in a line from the other body; and the etherite mass motion push would tend to force the two bodies toward each other or into the cylindrical field of stress between the bodies, this being in the line of least resistance. Now consider any number of such bodies in free ether space and the fields of stress become numerous and the total more complicated but the same details of stress fields and motion tendencies toward each other hold, each for all the others, or the complete solution is that all move toward the gravitation center of all. Were we unprejudiced, by teaching, as to the cause of gravitation; it would seem much more reasonable to consider it push than pull as we know that mass motion energy exists and do not know that an entity of attraction exists: thus gravitation as push eliminates one unknown. As it is not essential to the theory that the etherites collide or actually impact with each other; let us now assume, in accordance with this theory, they do not collide; instead approaching each other in interferences or ether stresses. Gravitation then will not act instantaneously but with the velocity of light, which has been supposedly proven not to be the fact, but proof was founded upon premises having an entity of attraction instead of an etherite hypothesis, which completely changes premises and proof.

STRESS FIELDS

When we modify the problems just presented to conform with this theory which contends that etherites do not actually collide with each other but that real impaction is avoided by change of direction of motion; we see that while interference taking place on such a large scale as in gravitation of two large heavenly bodies toward each other; produces heat; the greater portion of the energy that is changed or transformed, is not changed into heat but into higher types of energy such as radio-activity or even super radio-activity. This means other changes of direction of mass motion or of position and direction of stress. Etherites do not pass through masses of matter as rapidly as through free ether space because of the increase in frequency of interference. Stress fields in and about neighboring large masses become extremely complicated forces. Thus we may expect the large bodies to hold the most complicated stresses or the greater changes of energy or become hotter or radiate more light and electrical and radio-active energy, somewhat according to each one's size. The most abnormal flow of etherites in point of normal numbers, normal times and normal directions would be within the two masses and within the cylindrical field between the two. Greatest stress of one kind, occurs within the masses; of opposite kind, between the masses: the former tends to move into the latter.

INERTIA

The spaces of greatest interferences, the bodies, tend to move into the space of greatest stress, the field between, to restore ether equilibrium. According to the etherite hypothesis, in order that motions of the heavenly bodies through the ether, take place, it is essential that not only energy to produce the motions be present, but such energy must be sufficient to overcome the etherite resistance and furthermore to produce the prevailing motion of the body through the ether, in other words, constant force must be acting to overcome friction and cause motion. And how much more reasonable is such process of thought than that ether (of unknown origin) is a non-resisting nothing (unknown nothing) and that bodies are given an initial push (of unknown source) and an attraction (unknown) gravitates them toward each other but centrifugal force just balances the attraction or centripetal force, even though constant changes are going on in either body and matter constantly added to or subtracted from them; which conditions tend continuously to unbalance the distance relations. Still these bodies maintain perfect equilibrium. Is the multiple entity more reasonable than the single entity? If the single entity theory is the right process of thought, the stars and the planets do not tend to move forever through ether, along their paths, without friction; but rather etherites tend to retard their outward rotatory, revolutionary and translatory motions.



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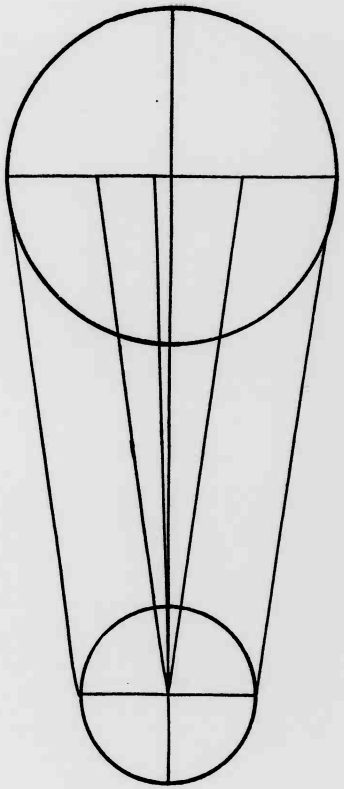

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INFERENCES

We have wandered a considerable distance up and down the philosophic hills without having arrived at any definite port because of lack of sufficient skill in portraying a problem. However, if the general outline of a possible philosophic problem of the universe of man, having just one absolute from which all is derived; containing ether as the finer of the vibrations; such ether having the etherite as the predominating type of body from man's view point; the etherites being uniform in mass, size, velocity, energy and distance asunder; aggregates of etherites forming matter and the ether, motion, matter, energy and all allied entities being related through one absolute, has been made at all plain; there are certain definite results that must obviously follow. Etherites are only the predominating part of the ether from man's point of view but energy, matter, gravitation, heat, light and life are due to etherite mass motion direction and stress. Matter and motion are one in the sense that matter is only a complexity of many motions. Mass and energy are one in the sense that mass is the square of all the motions within a body while energy is this, multiplied by the square of all translatory and total outward motions. Energy bears a somewhat similar relation to mass that matter bears to motion. Gravitation consists of differences in ether equilibrium, or ether stress caused by bodies in the ether.

COMPARISONS

Gravitation is related to ether, motion, matter, energy and mass as a result of laws, broader than just those of gravitation alone. The gravitational laws follow of necessity. In other words the laws of gravitation are only the broader laws of ether, matter, energy, and mass, applied to particular problems of nature, involving certain systems of motion. Gravitation involves one type of stress, heat another, light another; but each is a phase of a more inclusive problem of motion relation. In passing from the infinite into the finite; motion is the first distinct phenomenon that is manifest to man and includes all phenomena. Matter is systematic multiplicity of motions. Mass represents some portion of this matter. Energy represents multiplicity of the mass. Stress is imbalance in directional energy or tendency toward unstable energy equilibrium. Heat, light, electricity, gravitation and life are all problems of stress or disturbances of etherite flow or etherite interference in point of time, space, position or direction. Motion, ether, matter, mass, energy, stress, gravitation, heat, light and life might in a sense be considered evolutionary differences or systematic manifestations of the absolute influenced by time, space, position, direction. The real relation is what we seek and where inexact phrases have been used; the reason has been to emphasize the existing relation.

MOLECULAR VIBRATION

Consider two stars in space approaching each other, not from any attracting entity within their atoms but from the push or force set up by interference with normal etherite motion by vibration of aggregates of etherites within the bodies across the normal paths of the etherites. The etherite change of direction of motion, or stress, is greater within the two stars than in free ether space and is greater, or different, in certain parts of each star than in other parts, owing to normal flow of etherites being interfered with in greater measure in some parts than in others, due primarily to the make up of each body and secondarily to difference of interference caused by the opposite body. Directional energy within each star is not in equilibrium; there is also stress outside them. Stress within the star causes changes in the motions or vibrations of the matter, either in point of time, space or direction; producing stress of heat, light or electrical phenomena. Stress in the ether without the stars causes gravitation of each star toward the other one. Thus we see that it is not essential that the heat, light and radio-activity of stars or suns be produced by gravity of the parts; nor by an initial combustion that is gradually dying out; nor by dying radio-activity that lessens the amount of heat, light or energy contained in the body: but stress of etherite interference is a continuous, ever present source of energy.

ROTATIONAL MASS

Consider two stars in space, or to make example, the sun and Jupiter, rotating upon their axes. Imagine the sun in two halves, the one-half rotating toward Jupiter and the other rotating away from the planet, as two separate bodies. Think of the centers of mass of the two halves as located at the points toward which each half would cause Jupiter to gravitate on account of interference with etherite flow through that particular half of the sun, toward the planet. If for the moment we concede etherite ether, disregarding the remainder of the theory; it is plain that the flow of etherites toward the planet will not be the same through that half of the sun rotating toward Jupiter, as it will through that half rotating away from Jupiter. The greater flow of etherites will be through that half of the sun rotating toward Jupiter; and the greater number of interferences will occur in that half of the sun rotating away from Jupiter; or in other words there will be greater tendency for the planet to gravitate toward the center of that half of the sun that rotates away from planet, than toward the center of the half of the sun rotating toward Jupiter. Thus we infer, gravitation does not act with the same force between masses at rest, masses moving toward each other and masses separating. Let us therefore distinguish between mass as an inert body and mass rotating upon an axis and term the latter ROTATIONAL MASS.

CENTER OF MOTION

The force of gravitation is slightly greater between bodies separating than between those moving toward each other and the measure of variation is related to etherite velocity. Jupiter does not tend to gravitate toward the center of inert mass of the sun but instead it gravitates toward the center of the total of all motions of the sun as these motions are related, through the etherite flow, in time position and direction to the planet Jupiter. We have considered mass some multiple of the total of all the motions that go to make up the body and now we must consider gravitation as stress between such masses and dependent upon the time position and direction of the total of all the motions of all the parts of the whole body as related to similar total of motions of the other influencing body and prevailing by reason of interference with the etherite flow by two influencing bodies. Bodies tend to gravitate toward the center of relative total motions rather than toward the centers of inert mass. The resultant of these totals in the case of Jupiter would not be in a line toward the sun's center but toward a center of relative motions located within the half of the sun rotating away from Jupiter. Resolving this resultant into parallelogram of forces; one side is from center to center, the other is from center of sun to center of motion or its equal at Jupiter, tangent to the orbit.

REVOLUTIONS

Jupiter then tends to move, not only toward the sun, but also around the sun: also to move the sun around Jupiter in same revolutionary way. In the case of sun and Jupiter, both rotating, the problem assumes the aspect of four bodies under inertia, attraction idea of gravitation, each star or planet tends to revolve around any neighboring star that rotates on its axis and in the same direction the star rotates. The relation of position and direction of motion between sun and Jupiter remains the same regardless of the part of the orbit in which Jupiter is located; that is the tendency for revolution is present in any part of orbit. Two inert stars in space gravitate directly toward each other but when they are rotating the problem is no longer simple gravitation. Translatory motion through space is also one factor that determines the orbit, velocity of etherite translation is another: directional motion being only one factor; but the purpose is simply to show the relation between masses. Increase of mass, rotational velocity or the diminution of the distance asunder; all tend to increase the revolutionary velocity of the opposite neighboring body so that large masses of like size, rotating rapidly, will tend to revolve each other and themselves be revolved in the same degree, thus causing greater force separating them, than prevails between bodies differing more in size, mass and rotation.

TRANSLATIONAL MASS

Having considered the gravitational relations between inert masses and rotational masses; there remains for consideration, the effect upon gravitation, or etherite interferences, of masses having translatory velocity through ether space. To differentiate inert, rotating and translating mass, let us term the latter: TRANSLATIONAL MASS. Translational mass owes its specific action to the time occupied by etherites in passing from one body to another and the altered direction of this action from that of the immediate or present position direction of the other body. It is evident that etherites moving with the velocity of 186,400 miles per second, will not cause gravitational action in a direct line between two moving masses, but the time taken by etherites in passing from one body to the other will alter the direction of action of force; or will cause an entirely different set of etherites to be interfered with, from what would have been the case were the bodies inert. An inert mass tends to gravitate the secondary body directly toward the center of inert mass. Rotational mass tends to gravitate secondary mass toward a point located within that half of the mass, rotating away from the secondary body. Translational mass tends to gravitate the minor body toward a point located behind the center of mass, regarded from the standpoint of translation. Such a term as "Inert mass" is used theoretically; not as admission that inert mass is a possibility.

ROTATIONS

Consider that part of the etherite flow through the sun that also strikes the planet Jupiter, gravitating Jupiter toward the sun; as affected by the sun's rotation. Imagine the sun again divided into two halves, the one rotating toward and the other away from the planet: there will be less interference with normal etherite flow through that half of the sun rotating toward Jupiter than through that half rotating away. Extend an imaginary plane through the centers of the sun and the planet Jupiter, including the axis of rotation of the sun, dividing both the sun and Jupiter into two equal halves. Half of the sun on one side of this imaginary plane rotates toward Jupiter: the other half rotates away from Jupiter; regardless of the position, the planet occupies in the orbit. Each atom of Jupiter upon one side of this imaginary plane is nearer to each atom of sun upon the same side of this plane than it is to each atom of the sun upon the opposite side. Or, the whole of one-half of the planet Jupiter is nearer to that half of the sun, taken as a whole, upon the same side of the plane, than to that half upon the opposite side of the plane. There is less force of etherite flow, or greater force of gravitation, exerted upon that half of Jupiter that lies on the same side of this plane as that half of the sun rotating from Jupiter; than on that, rotating toward Jupiter. Or, stress of the rotating sun, rotates Jupiter.

VELOCITY FACTORS

The rotational velocities of bodies will be influenced by all of the following factors. Etherite resistance diminishes rotatory motion. Increase of distance between the body and the nucleus diminishes the rotational velocity. Increase in the rotatory velocity of the major body increases the rotations of the minor body. Increase of size of the major body, the other factors remaining the same, increases the rotational velocity of the secondary body. Increase of mass of nucleus, or of the whole system of which the nucleus is the center, increases the rotations of the secondary body. Increase in size of the minor body, without other change, increases its own rotations. Temperature elevation, other factors remaining constant, increases the rotatory velocity. Factors determining the revolutionary velocity of one body around another are as follows: Etherite resistance diminishes revolution. Increase of distance between the body and the nucleus diminishes the revolutionary velocity. Increase of rotatory velocity of the major body increases the revolutions of the minor body. Increase of mass of nucleus, or of the whole system of which it is the center, increases the revolutionary velocity of the minor body. Increase of size of the major body, increases the revolutionary velocity of the minor one. Reversing major and minor bodies, and the same factors apply to the motions of the opposite.

ATOMS

If the general plan of this hypothesis is acceptable, it must also apply to atoms, the degree of applicability depending mainly upon relations of size, mass and velocity of the etherite to that of the electron and the ion. Electrons must revolve in the same direction that the ion rotates and the electrons within those atoms having greatest atomic weight must revolve most rapidly providing the distances from the ion are the same in both instances. The greater the number of electrons within the atom, the greater the rotation and revolution velocities at unit distance from the center, as increase in number of electrons, increases the mass of the atom, consequently the motions. Electrons near the nucleus rotate in the same direction the ion rotates and those at remote enough distances rotate in opposite direction. Those between rotate obliquely or at right angles to the plane of rotation of the ion; assuming that the electrons are all similar. Electrons with highest translatory velocity are situated near the center of heavy atoms. They are not knocked out by impact but have their path directions changed by interference. In a sense the atomic system resembles the Solar or Saturnian System, obliquity of plane of rotation of the minor bodies being caused by resistance of the ether opposing the force producing forward rotation; the resultant of all acting forces being oblique rotation.

POLARITY

Let us call all bodies rotating in one direction, relative to the direction of revolution and the direction of rotation of the nucleus, positive; and those rotating in opposite direction, negative. Let us term those rotating in the same direction as the nucleus, and the nucleus as well, positive. Those rotating close to the nucleus, rotate in the same direction, consequently are positive; those rotating at right angles to the planes of revolutions, are neither positive nor negative. Those at remote distances, rotating backward, in relation to direction of revolution, are negative. Thus a positive or negative body may not be an absolute or a thing in itself but a relation of motion directions; but let us differentiate the positive body from the positive pole of one body or system, which changes as we change position. Systems are then neutral if inert or equalized; and positive or negative according to the form or the direction of motion that predominates. In the same sense that there is no absolute time, space or direction; neither is absolute positive, negative or neutral polarity practically possible. In our own Solar System, Sun, Mercury, Venus, Earth, Mars, Jupiter and Saturn are positive: Uranus is nearly neutral and Neptune negative. Neptune would be more apt to leave the system than Saturn but Saturn if forced out would leave with greater speed; becoming, however, negative. Velocities and motion directions within adjacent systems decide their attitude in combining.

WAVES

Consider any system having a rotating nucleus and revolving minor bodies, from the standpoint of the fields of stress surrounding the masses. We have seen how two bodies in neighboring ether space may produce stress fields in the etherite flow, that cause gravitational motion of masses. Likewise we may have seen that two neighboring bodies, one of which is rotating, may produce revolution of the minor around the major by virtue of a stress field, produced in the flow of the etherites by the larger rotating mass. Also that this rotation may cause still another inequality in the etherite flow, which is only a form of ether stress producing rotation. These stresses are translated through space at a velocity of 186,400 miles per second but this velocity is simply the etherite velocity, while the stress itself is not a longitudinal stress or wave but a transverse wave in the ether; so while the ether stress, or stress wave, may be propagated longitudinally and not transversely; the wave itself is a transverse wave and not a longitudinal wave, in revolutional problems. In simple gravitation, no series of waves are formed but a regular diminishing stress field. Revolutions of the minor bodies of a system may produce regular, systematic or periodic, symmetrical interferences in the etherite flow; and these form waves of stress in the ether. Only rotational or revolutionary movements in ether will produce vibrations of time precision.

HEAT

The large waves produced in the ether by the rotations and revolutions of stars and planets are not received by man as waves but they are given off through immense ether space as such. Molecular, atomic and electronic stresses in ether, however, are possibly of somewhat similar nature but given off on small enough scale to be perceptible by man's senses but even then it is more probable that the variation of the waves produced by the electrons would be more capable of recognition than the ordinary waves. Such variations might be produced by change of obliquity of the plane of revolution of the electrons; change of plane of rotation of the nucleus or the electrons; or change of velocity of the rotation or revolution, which is closely allied to a change of mass or distance asunder. We recognize as facts, ether waves that have different frequencies and different amplitudes and name them according to their frequency and amplitude of vibration, heat, light, electricity. Is it not reasonable that such waves may be caused by stress within stress in the waves produced by the electrons revolving around the ion, or in other words by systematic variation from the regular ether wave produced by the electron, or a regular periodic interference with the stress wave, produced by the ion in its rotation. The possibilities are multiple; still from the knowledge of the limitations of mass, space, energy, etc.; the type may be found.

LIGHT

It is evident that the greater the mass of the atom, the more rapid the rotation of the ion; and as a consequence the shorter the period of the revolution of the electron and the more frequent the stress change, or the interference interval. The greater the number of interferences in each second, the shorter the wave cut in the stress or in regular etherite flow, considering this flow continuous in the same sense that a river is a continuous stream of water, although made up of millions of individual molecules or parts. Naturally certain lengths and frequencies of waves belong to certain atoms, or combinations of atoms, or the types may belong to definite conditions of exchange of atoms by molecules; or an interchange of electrons by the atoms. Thus were other atoms, with nuclei rotating more rapidly, brought within close proximity; the nuclei of the original atoms might be made to rotate faster, consequently shortening the period of the electrons, giving shorter waves. Such waves are as real as those produced by stellar bodies. They are not of such magnitude. As they pass out into the universe, their total energy diminishes as the inverse square of the distance; but their lengths and their frequencies change very nearly if not quite imperceptibly. Such energy represents stress of the ether and means real interference waves in the actual etherite flow and not unknown waves of unknown energy in another unknown elastic solid, ether.

LENGTHS AND FREQUENCIES

Granting for the moment that the hypothesis of etherites is sound and that etherite flow is interrupted by electrons, molecules, satellites, atoms, planets, and stars in motion; let us consider the effect of motion in line of sight. If the cause of gravitation is interruption of etherite flow and the gravitational force is slightly increased between bodies moving away from each other and slightly diminished between masses moving toward each other; then the same general rule must hold in regard to smaller or electronic stresses or interferences in ether. If ether waves produced by electronic or ionic interferences, cause light when of certain very definite types; then if the sources of light are moving toward or away from us, etherite flow will be interrupted at lesser or at greater intervals, respectively, and the cuts in the etherite flow will be nearer together, cutting a shorter flow of etherites if the source is approaching and the opposite when receeding. In as much as energy of these ether waves is stress energy, produced by interferences with etherite flow and each interference represents a given amount of energy; then the greater the number of interferences, the greater the energy or force, other things being equal. In other words the higher the frequency the greater the energy or total interference. Also diminution of total energy would vary as the surface of a sphere or as the inverse square of distance.

VIBRATIONS

As these waves pass into ether space at immense velocity, they retain their characteristics for great distances, but at very remote distances from the source, they tend to lose their detail characteristics and gradually return to just ether stress, and at last to the stress from which they came (the stress to maintain equal amounts of energy content to equal ether spaces). From a study of the stresses produced by both rotations and revolutions of large masses and by their movements toward and away from us and the complexities of these large fields of stress; we may thus obtain some idea of the possible complexities of waves produced by similar small movements within the molecule; to say nothing of that chaotic stress produced by non-symmetrical vibrations; also we see how each wave may have a variety of characteristics, caused by possible variations in time, space and direction of motions, at the source or point of interference. Large waves, produced by large stellar bodies, are just as truly ether waves; as are waves of heat and light: and their purpose in nature may be very different or relatively quite similar. As a wave in ether, or stress in ether is caused by a particular part, vibrating at a particular amplitude and frequency; so may that same wave, carried with etherite flow to remote distances, tend to set up, or increase, the same vibrations of similar bodies in somewhat similar amplitudes and frequencies, thus stabilizing ether balance.

LIFE

Almost since the dawn of thought, mankind has endeavored to explain life, its relation to the cosmos and its purpose in the scheme of things. This passing philosophy does not regard man as the ultimate goal but only as an infinitesimal worker in the great cosmic hive, the universe. The ultimate purpose of the cosmos is just as unknowable as the ultimate absolute; but with establishment of the true relations prevailing between motion, ether, matter, mass, energy, time, space, position, direction and polarity; man's purpose in the universe becomes apparent. If the theory of just one absolute, also the hypothesis of etheritic ether, are correct and we consider life in the ordinary sense; then life seems to be an ether stress transformer. The capability of the life to ultilize ether stresses depends upon the character and the complexities of the systems that are contained within that organization which we call life. The problem of life is that of an organized interference with the etherite flow in such manner as to change or transform the ether stresses from one type to another; selection of the stresses thus transformed depending upon the relation of the vibration within the living organism, to that of the stress without. In other words, life is a program of inclusions and exclusions, through the medium of some transformer, tuned to intercept certain ether vibrations by means of different vibrations.

LIFE VERSUS GRAVITY

One quite fundamental endeavor of life is to overcome the stress of gravity and from the very lowest to the very highest type of life, continuously improved processes are involved. Apparent hindrances or epochs of retardation only mark new beginnings that greater heights may be attained until at last man walks erect and moves himself and other objects about upon and near the face of the earth at his pleasure. All lifeless things are unconcerned of gravity and assume the position of least resistance where gravity places them. All living things to the contrary, endeavor to overcome gravity and place themselves in positions or move about in spite of the force of gravity and are capable of over riding or of overcoming gravitation. Other stresses besides gravitational, are also transformed by cell life; but heat, light, etc., are less fundamental, if not less vital in the program of stress utilization, we call life. Overcoming gravity is such an ordinary event in every phase of our life that only a very small percentage of the total energy that we transform is used for any other purpose. Could means be discovered whereby the drudge of overcoming gravitation could be materially lessened or almost eliminated; what a change in mankind, would be wrought within the earth. Life under such conditions would be ideal as all energy would not be required for the lower purposes of life, but devoted to the higher.

EARTH'S CORE

According to the Newtonian inertia, attraction theory of gravitation, there are only two positions in the universe where gravitation is nil and practically the same is true with the etherite hypothesis of gravitation. The one position is in infinite ether space. This does not require consideration now as it is quite beyond the realm of practicability. The other position is within a hollow sphere. This is key to the nature and purpose of life. Consider for the moment, our earth with its core removed and this core used to enlarge the size of the earth and such process continued until the tropic and temperate zones of the earth were honeycombed with perforations of a comparatively thin shell of far larger size than that of our earth at the present time. Within such empty hollow sphere, gravitation would be nil except for comparatively slight force caused by actions of the sun, moon, etc. However, the core would not be empty; instead, the water of the oceans would pour into the honeycombed perforations of the shell; and the greatest density of the water would be some distance below the surface where action of the force of gravitation maintained maximum energy. From this distance below the surface of the earth, toward the surface and outward; gravity would diminish in force; likewise from there toward the center of the earth, gravity would diminish to near the zero point at the center.

THE CELL

For the moment, let us turn our thoughts from the coreless earth to some similar object in nature, as for instance, the living cell. Here we have a perforated shell or skin, which is more or less elastic, containing material of a different type and situated within some medium which is included or excluded, in part or as a whole, by the cell, according to the perforations, the elasticity of the shell, the medium without and the nucleus within. Different relations of the nucleus, the skin and the medium without, decide the inclusions and exclusions or determine the type of cell. The medium or environment determines the life processes or the functioning of the cell by altering the relations of medium, skin and nucleus; thus deciding the inclusions and the exclusions that take place through the skin. It is not impossible that this shell might include certain energies and exclude others in such manner as to raise the energy content of the whole cell and if in so doing the size of the cell were sufficiently increased the skin would break and possibly form two cells. Or such process might take place within the nucleus; bursting the shell of the nucleus, thus forming two nuclei capable of bursting the hollow sphere or of propogating life. This would not indicate that life propogation is devoid of intelligence, but rather that life is not a thing in itself, or an entity.

HOLLOW SPHERE

Let us now return to the earth's core removed in its entirety, the earth made larger and the whole thin shell honeycombed with perforations. We have seen that the water of the oceans fills these perforations and perhaps is pressed toward the center of the earth to fill the hollow core; but according to the etherite hypothesis, that is not all that results, in as much as increased size of the earth tends to increase its velocity of rotation so it also tends to increase distance between sun and earth. This diminishes rotations. Such increase of distance between the earth and the sun would give the earth larger polar ice caps and the average temperature of the whole interior of the earth, caused by the etherite interference, would be lowered by the larger size bringing down the average temperature. Thus the moisture of the earth would be taken up by the shell and the evaporated portion collected at the poles; especially would such be the case were the shell discoid in shape. Thus can we imagine an earth with only polar oceans, mostly frozen but partially thawed out alternately during the summer seasons and the atmosphere collected within the honeycombed perforations and filling the otherwise empty hollow sphere, with a slight overflow on the surface of the earth. Gravity at almost zero within the hollow sphere, so that the one main impediment to growth of life would no longer retard the highest development of the organism.

THE STELLAR CELL

If the interior state of the earth and other planets is due to radio or super-radio activity or if the heat of the interior of the earth is due to interferences of the etherites; the same condition would still prevail within the hollow sphere but less in degree in as much as the shell would be larger, thinner, rotating faster. The inside termperature of the shell of the hollow sphere would be warmer than the present average outside of the earth and would be governed by thickness and shape of the shell; this being mainly determined by interferences within the shell, rather than by the sun light. Light would be determined by size, position and direction of the perforations but sunlight would not be an absolute necessity to life in the hollow sphere as the etherite interferences could be utilized to produce artificial light. Gravity would not be nil but close to zero. The sun and moon making unequal stresses of gravitation would cause unstable conditions of gravitation, owing to their changing positions. In order that this should be stabilized, it is necessary that the planet assume the relative gravitational position regarding the sun that the planet Uranus occupies, so that rotation of the planet is at right angles to the plane of revolution around the sun; better still if one pole of the planet always faces the sun; the other capped constantly with ice; changing rotation but allowing ideal gravity conditions.

THE NEW RACE

Imagine a race of living beings, within a hollow planet, where sunlight, not particularly bright, is dissipated from a cloudless sky; the earth, over which these people move, with little effort, is warm and rich and grows luxuriant herbage; without much work, either in tilling the soil or harvesting crops. Immense irrigation tubes, built easily, supply the soil with moisture brought from the great basin of ice and water at the north pole, while the south pole ever faces the sun, throwing its beams through the honeycombed lattice work of perforations into an atmosphere, while rare, extremely invigorating, owing to the radio-active forces present within the sphere. The faithful, and how great must have been their faith, rest within; not because of their faith do they rest, but because through faith and work they arrived where little work need be done. The scoffers and scorners toil without on the desert sands in the heat of the day and huddle together throughout the chill night; for the days are hot without and the nights are cold; but within there is no night and the day is one of peace and joy throughout a long life of faith and work and thought and power, wrought for the good of the whole cosmic universe. Work, not to keep in existence a selfish self for the self thrives well with little work, but work to fill the universe with other planetary cells where gravitation is not master but is itself mastered to do the work of the race.

PROBABILITY

If the plan of a single cosmic entity and of etherite ether represents right thinking; it is evident that the inertia, attraction plan of gravitation is in error; but the latter holds the field by virtue of establishment by authority; neither will it give way until the complete, correct proof establishes the former. In the meantime, lack of other than a selfish purpose of mankind; chaotic relations of the multiple entities; entities without meaning; all favor single rather than multiple entity. The very law of gravitation, having an inverse square without meaning; secular acceleration of the moon's mean motion; the motion of the perihelion of Mercury's orbit; the greater angular velocity of the sun's and Jupiter's equators over that of their higher latitudes; are at variance with inertia attraction theory. The unaccountability for planets' revolutions, rotations and obliquities of axes, or their relations; the inability to account for light, its transverse wave and longitudinal direction; inability to account for ether, ether vibration, ether propogation of energy; inability to show logical reason for the space relations of the heavenly bodies; when added to the foregoing, furnish ear marks of uncertainty to a theory that holds inertia and attraction as entities. Can the single entity theory and the etherite hypothesis so relate our present day unknowns that a simple reasonable cosmic unity results?

PROOF

The answer is simple and many eminent scientists have emphatically voiced it in criticism:—PROOF. Demand by mathematicians for mathematical proof; by chemists for proof by chemical formulæ; by physicists for proof in terms of matter and of energy, according to their accepted laws; and by religionists for inspired teachings, setting forth such process of thought; might be considered well calculated to intimidate any other than a novice. Be that as it may, where proof lies, both pro and con, is known and to some extent available.

1st. The relation of the rotations, revolutions, of all the planets to the grand total of their motions, such as, translatory, revolutionary, rotatory, molecular, electronic; or to their total energy, such as, mass energy, molecular and electronic, such as, heat, light, electrical, radio-active energy; in a word to ETHERITE ENERGY.

2nd. Whether Jupiter's most rapid rotations were coincident with his nearest approach to Saturn.

3rd. The relation of gravitation to the grand total of all the motions of all masses concerned.

4th. Relation of etherite resistance to rotation and obliquity and their producer or stress cause.

5th. The relation of the force of gravitation as it acts between bodies at rest, bodies receeding from each other and bodies approaching; as such velocity of receedence or approach compares with the velocity of light or with etherite velocity.

6th. Determination of the law of space relation.

7th. Discovery of the entity of attraction.

FINIS

The preceding pages are summaries of essays written during a period of many years and are presented merely as a prologue to introduce a process of thought, having as its foundation, two premises; single entity and etheritic ether. The ideas portrayed are not presented as truths but as hypothesis or at best as theories, until substantiated by complete mathematical analyses. Many interesting relations bearing upon the work of scientists during the last few decades have been established; but quite insufficient to lay claim to any more than a theoretical solution of the master problem of the present century. Exigencies of the times demand discontinuance of the work for the time being; therefore a brief summarization of the thought processes conceiving such a cosmic philosophy, is given in this booklet; the pages of which take under consideration, some of nature's stumbling blocks; not primarily for detailed analysis; but rather regarding their relations to all other unknowns. Circumstances permitting, it is hoped to make this booklet the forerunner of a more complete presentation of this interesting subject from a standpoint of mathematical and fact relations. No prior claim of originality regarding any idea presented here for consideration, actuates the bringing forth of this booklet; but should aught of truth develop therefrom or should this seed fall upon other than stony ground, the reward will have many times repaid the effort.

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